

What is claimed is:

1. A method of manipulating data, comprising the steps of:
providing a peripheral;
5 providing a memory, the memory defined by an address space, the address
space comprising a location;
mapping a data structure to the location;
receiving data with the peripheral; and
storing the data to the location.
- 10 2. The method of claim 1, the step of storing comprising a step of transferring the data
directly from the peripheral to the location.
3. The method of claim 1, the step of storing comprising a DMA transfer of the data
from the peripheral to the location.
4. The method of claim 2, further comprising a step of executing the data directly from
15 the location.
5. The method of claim 4, the data comprising streaming data.
6. The method of claim 4, the data comprising a binary executable file.
7. The method of claim 1, the data structure comprising a Java-like data structure.
8. The method of claim 1, the data structure comprising an object.
- 20 9. The method of claim 8, the object comprising an array object.
10. The method of claim 9, the array object comprising a byte array object.
11. The method of claim 8, further comprising the step of providing an execution
means for executing instructions, and the step of storing the data comprising execution of
no more than two of the instructions.
- 25 12. The method of claim 11, the execution means comprising a processor, and the
instructions comprising a processor read instruction and a processor write instruction.
13. The method of claim 12, the data comprising a Java object.
14. The method of claim 1, the data comprising byte-codes.
15. The method of claim 14, the byte-codes comprising Java-like byte-codes.
- 30 16. The method of claim 15, further comprising the step of providing an application
program; and the step of performing operations on the Java-like byte-codes with the
application program directly from the location.

17. The method of claim 1, the step of receiving comprising receiving the data as wireless data.

18. The method of claim 1, further comprising a step of operating on the data with an application layer program directly from an address space comprising a contiguous address space.

19. The method of claim 1, further comprising a step of executing the data, wherein the data is stored in only one memory location before executing the data.

20. The method of claim 19, wherein the location comprises a more than one location and the locations located contiguously in the address space.

21. A communications apparatus, comprising:
a peripheral, the peripheral receiving data;
a memory, the memory defined by an address space, the address space comprising a location, the location comprising a data structure; and
a data transfer portion for transferring the data directly from the peripheral to the data structure.

22. The apparatus of claim 21, the data structure comprising a Java-like data structure.

23. The apparatus of claim 21, the data structure comprising an object.

24. The apparatus of claim 23, the object comprising a byte array object.

25. The apparatus of claim 21, further comprising a processor, the processor executing processor instructions, the transfer of data from the peripheral to the location occurring in no more than two of the processor instructions.

26. The apparatus of claim 21, the data transfer portion comprising a DMA controller.

27. The apparatus of claim 21, the data comprising byte-codes.

28. The apparatus of claim 27, the byte-codes comprising Java-like byte-codes.

29. The apparatus of claim 21, the peripheral comprising a wireless baseband.

30. The apparatus of claim 21, the data comprising streaming data.

31. The apparatus of claim 21, the wireless baseband comprising a Bluetooth compatible wireless baseband.

32. The apparatus of claim 21, the wireless baseband selected from a group comprising: Bluetooth, 802.11, HomeRF, IrDA, CDMA, GSM, HDR, and 3GPP compatible basebands.

33. The apparatus of claim 23, further comprising:
a program execution unit;
an application program, the application program operating under control of the program
execution unit, and the application program operating on the data directly from the
5 location.
34. The apparatus of claim 33, the application program comprising a Java-like
application program.
35. The apparatus of claim 33, the data comprising a binary executable file.
36. The apparatus of claim 33, the data comprising streaming data.
- 10 37. A communications apparatus, comprising:
a peripheral, the peripheral receiving data;
a memory, the memory defined by an address space, the address space
comprising a location, the location comprising an object; and
a data transfer portion for transferring the data directly from the peripheral to object.
- 15 38. The apparatus of claim 37, the object comprising a Java object.
39. The apparatus of claim 37, the object comprising a byte array object.
40. The apparatus of claim 39, the data transfer portion comprising an execution means
for executing instructions, the execution means transferring the data with no more than two
instructions.
- 20 41. A communications apparatus, comprising:
a peripheral, the peripheral receiving data;
a memory, the memory defined by an address space, the address space
comprising a data structure; and
a data transfer portion for transferring the data directly from the peripheral to the
25 data structure.
42. The apparatus of claim 41, the data transfer portion comprising a processor, the
processor executing processor instructions, the transfer of data requiring no more than two
of the processor instructions to transfer the data from the peripheral to the data structure.
43. The apparatus of claim 41, the data comprising Java-like byte-codes and the data
30 structure comprising a Java-like object.
44. The apparatus of claim 43, the peripheral comprising a baseband.
45. The apparatus of claim 43, the apparatus comprising a wireless communications

apparatus.

46. The apparatus of claim 44, the apparatus comprising a die, the die comprising the execution means and the baseband.

47. The apparatus of claim 46, the baseband comprising a Bluetooth compatible
5 baseband.

007443-000101